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ABSTRACT

Funding for the formation and maintenance of 23 research laboratories and centers has, in the past, come from the USOE, administered by one of its units. Legislation is currently pending before Congress that would create a National Institute of Education and transfer some of the responsibilities, including that of funding work in the laboratories and centers, from the USOE to NIE. A new institutional support policy has been devised which selects and systematically arranges existing components, many of which have emerged over time since the first institutions were founded. The objective is to develop decision models, assessment criteria and methods, and monitoring procedures that are appropriate to program objectives and policies and to the institution's achieved maturity. (Author/WM)

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Charles H. Frye
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MANAGEMENT POLICY FOR INSTITUTIONAL SUPPORT AND ASSESSMENT

National Center for Educational Research and Development
Division of Research and Development Resources

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MANAGEMENT POLICY FOR INSTITUTIONAL SUPPORT AND ASSESSMENT

I. INTRODUCTION

The United States Office of Education (USOE), through the Division of Research and Development Resources (DRDR) as of this writing supports 23 institutions. These include:

- 11 regional educational laboratories;
- 10 university-based R&D centers;
- The National Program on Early Childhood Education; and
- The National Center for Higher Education Management Systems at WICHE.

In the brief seven-year period that has encompassed the life span of these institutions, the USOE has brought some of the first institutions of their kind into existence, nurtured them, ran interference at the Federal level, and helped many of them develop strong R&D programs with associated management support. In this short history, the laboratories and centers can already point to many significant achievements of national importance. Products from these institutions have consistently attracted the highest ratings in evaluation studies such as one recently completed by the Educational Testing Service. 1/

The USOE policy that has governed the support of these R&D institutions during their brief seven-year history has largely

been derived in bits and pieces as issues demanded it. Annual contracts are negotiated on the basis of submitted scopes of work and budget requests. Although the recent trend has been to negotiate the institutional budget amount on the basis of each of the ongoing programs, no policy has been articulated which links the funding to the program. Comparisons between institutions and/or programs have been difficult. Recent reorganizations that brought the funding of both laboratories, and centers under one administrative unit makes the need for a uniform funding policy even more evident.

No explicit support policy statement has existed that is comprehensive and systematic. The previous policy exists primarily in the form of guidelines and procedures for the various facets of the laboratories and centers. One of the unfortunate assumptions that guided earlier practices was that Federal appropriations were, by now, expected to reach approximately three times their present $34 million level. This not being the case caused the USOE the problem of having to terminate support on some institutions in order to maintain minimum required support levels in others. Since no explicit and generally acceptable policy existed for making judgments with regard to terminating less meritorious institutions, the USOE staff and their consultants had to handle these decisions on a case-by-case basis--which it did for 9 regional laboratories and 2 R&D centers. Furthermore, this nonpolicy position could not provide a basis for founding new

institutions--indeed it could hardly be expected to under the conditions.

Those 11 termination decisions were difficult ones and not without criticism, although there is an abundance of testimony that attests to the wisdom of each of them. A more serious problem has resulted by default, one that was probably inevitable: the previous policy has been characterized by many as one of attrition or, worse, destructive competition. The survival of the most promising programs has required the midcourse termination of other, less promising ones. The resulting attrition has led to a lowering of morale, decrease in prestige and insecurity among remaining institutions, all of which must be reversed if the program is to be strengthened and the initial investment capitalized upon.

Throughout their relatively short history, funding for the formation and maintenance of the laboratories and centers has come from the USOE, administered by one of its units. At the time of this writing, legislation is pending before Congress which would create a National Institute of Education (NIE) and would transfer some of the responsibilities, including that of funding work in the laboratories and centers, from the USOE to NIE. It is expected that this policy will apply within the framework of either agency so that all future references in this paper will be simply to the agency, referring either to the USOE or the NIE as the funding source.

The following pages describe a new institutional support policy. It is new primarily in the selection and systematic arrangement of existing components many of which have emerged over time since the first institutions were founded.

II. OBJECTIVES

To develop an institutional support policy and associated assessment procedures in time to support FY '73 funding decisions which meet the following criteria:

1. provides for the starting of needed new programs to respond to current educational problems.
2. makes it possible to start and build new institutions when such a course of action appears prudent in view of new program requirements.
3. allows a greater degree of control over Federal resources while at the same time recognizing the autonomy of the R&D institution.
4. provides programs with target completion dates from which planning for reallocating scarce resources to meet needs of other growing programs can proceed.
5. provides stability for multi-year blocks of time that recognizes that institutional capability must be built over time and does not escalate the level of expectation beyond reasonable possibilities of achievement.

. permits and encourages long-range planning and program management which does not place every program at risk each year because of changes in the budget picture or agency priorities.

. accepts the risk inherent in research and development.

6. provides a period of supervised growth for new institutions during which time they develop the focus that will guide their future R&D endeavors.

7. delineates a mechanism whereby the institution can broaden its base of support by soliciting funds from other Federal and non-Federal sources.

8. provides better balance in the R&D effort in:

. major educational problem areas.

. the several functional areas, i.e., research, development, field testing, and implementation.

. representation of major geographic areas.

9. is compatible with the planned funding policies of the NIE in anticipation of a possible shift of responsibilities regarding the laboratories and centers from the USOE to the NIE.

In summary, the objective is to develop decision models, assessment criteria and methods, and monitoring procedures which are appropriate to program objectives and policies and to the institution's achieved maturity; to avoid any pretense that the institutions are administered from Washington.

III. THE INSTITUTIONAL CONTEXT

Though the nature of the 23 institutions varies--especially among the 5 categories listed in the Introduction--all can be generally characterized as engaging in research, either basic or R&D, which is administratively organized into one (or more) program(s). In fact, the one outstanding characteristic that qualifies an institution for Federal funding under this policy is that it engages in programmatic educational research and development. Many other institutions are receiving other Federal support from the USOE for educational research projects who do not so qualify. The programmatic approach is designed to bring together a critical mass of experts to make a sustained attack on a particular educational problem.

While it is true that specific differences between programs and projects tend to grow fuzzy, there are some general concepts that do distinguish them. In the Journal of Research and Development Education John Hemphill distinguishes programs and projects in that the former is primarily committed to the "attainment of objectives" while the latter to the "execution of a set of planned activities."[2/] Of programs he says, "the outcomes....are of first importance." "If one strategy or approach proves ineffective, then it must be abandoned and replaced with another that promises to be more effective." In contrast, for projects he states, "Provided that the projects are of high quality and are faithfully and efficiently carried to conclusion, a project

can be said to have been well managed regardless of its outcome." Ward Mason describes the differences in an "uncertainty principle of research and development."[3] He argues:

> Research and Development cannot be planned with certainty. It follows that if time and budget are fixed, the outcome cannot be assured and there can be only limited accountability for it. The corollary is that if the objectives are fixed, i.e., there is accountability for the achievement of objectives, then time and budget must be allowed to vary in relation to emergent program requirements. Thus, given commitment to an objective, if intermediate steps in the process do not turn out as expected and it is necessary to go back and start down a new path, administrative arrangements are needed for appropriate changes in budget and time lines.

Therefore, the term "program" will be used here to designate an institutional strategy and associated activities for accomplishing a certain set of educational objectives, whether the objectives are designed to correct some educational deficiency or to validate many aspects of a theoretical base.

"Program" can include basic or applied research, development, field testing and dissemination. It is typically, though not necessarily, multi-year in duration. For the purposes of this paper a program will be assumed to be a collection of several components, each of which may resemble projects with milestone points at which interim outcomes or evidences of progress can be observed and assessed, and which have definite completion dates. Each program will be described by a comprehensive program plan. The agency may therefore use the program plan (or plans) as a basic unit for the allocation of its institutional funds.

Another distinction that must be made is between core support and program support. Core support is a term that has been used in many different contexts. It is used in this paper to designate funding which is specifically earmarked for managerial, technical and personnel services apart from the context of any program. In general, core support will refer to the cost of operating the institution irrespective of the work that is being done. Program support, on the other hand, will refer to the cost of delivering on the stated objectives. According to this usage, an institution receives support on one basis or the other but not both. The same cost factors are represented in both core and program support, the difference is in the method used to construct the budget. Of course, the latter presupposes that the institution has formulated its work around programs which are sufficiently clear to form a basis for budgeting. This support policy will use core support as a basis for funding new institutions and program support as a basis for funding mature ones. The maturity model will be discussed in a later section.

A final clarification is in what is meant by moral commitment. Since there are legal problems in committing Federal funds to multi-year programs, a moral commitment is used as a self-imposed obligation by the Federal Government to provide continued annual funding to the agreed upon programs within the limits of the current year's appropriation. The agency will continue to fund the program to which it has committed itself throughout the

completion of the program as presented in the plan subject to the availability of funds and the satisfactory execution of the program.

IV. THE INSTITUTIONAL MATURITY MODEL

Programmatic research demands a level of maturity in management that one cannot expect to find except among experienced institutions. One cannot expect to begin doing programmatic research from a standing start--there is much more to it than simply composing a program plan. Programmatic research is usually a team effort, often involving sophisticated technical and professional support. Such things as site location, staffing, staff training, alteration and equipping of facilities all precede the ability to do programmatic research. The staff must have a "critical mass" of experts willing and able to converge their interest on a specific problem or class of problems. Such teams are established through working on common problems as a part of an institution over a period of time. Prior to the establishment of the current educational laboratories and centers beginning in 1965, there were few institutions who were qualified to carry on programmatic research and development in education.

Even though several educational R&D organizations do exist that have demonstrated their competence to carry on programmatic research, more are needed. Only a few educational problems are now being systematically attacked and existing R&D institutions are not equipped for many additional problem areas. Nor is it necessarily appropriate for all new problem-solving efforts to

be undertaken by established R&D institutions. There is obviously much to be gained by a fresh team taking a new approach to new problems. It seems grossly uneconomical to some that one institution should be phased out followed by the establishment of a new one. While the justification for this practice is not presented here in adequate detail, it is often not only practical but desirable. When an institution's competence ceases to be relevant to current needs or it has in other ways ceased to be a viable R&D institution, it may be easier and less expensive to replace it than to rejuvenate it. The proposed policy will accordingly make a deliberate attempt to facilitate the founding of new institutions.

It is assumed that a new institution should not be expected to manage its research efforts programmatically from its inception. Therefore, a sequence of core support leading into program support forms the basis of the maturity model.

The Federal Government will, at appropriate times when important education problems arise, stimulate the submission of Institutional Planning Grant proposals, relatively short documents submitted by individuals or consortia who wish to propose the establishment of a new educational R&D institution. The proposals will lead to the award of a Planning Grant.

With the award of the planning grant, the potential institution enters the preinstitutional phase, a negotiated period of three to six months duration. Guidelines will be available from the

agency for the proposal, though no rigid formatting requirements will be imposed. The proposals will be evaluated by an outside group of reviewers and their recommendations, together with those of the agency staff, will be submitted to the agency's director for final selection.

The purpose of the Institutional Planning Grant will be to enable the preparation of a comprehensive proposal for the establishment of the institution. More than one Institutional Planning Grant may be awarded with the intention of rejecting all but one proposal. The award of an Institutional Planning Grant does not assure the grantee that the proposal he develops for the new institution will be funded.

The time sequenced activities shown in Figure 1 illustrate the various stages of the maturity model, from the Institutional Planning Grant to the mature, Phase III institution.

Figure 1

Stages of Institutional Growth in the Maturity Model

Submit planning grant proposal	Planning Grant	Phase I	Phase II	Phase III
	Planning the institution and its mission	Founding of the institution and development of plan and mission	Staffing for and management of the plan	Lifetime of program awards
	(3-6 mos.)	(1-2 yrs.)	(2 yrs.)	(Indefinite)
	Review #1	Review #2	Review #3	Review #4

The institution is said to "mature" as it graduates from one cell to the next, moving from left to right on the chart. Associated with each of the four points of advancement is a review decision that must be made by an assessment team. The assessment procedures are described in brief later on in this document and in detail in an associated document.

Each of the four review decisions may result in the loss of funding from the agency. If the funding is terminated as a result of a negative review, the institution may not be reinstated except as a new institution.

Having successfully completed the maturity process, the institution becomes eligible for a policy of reduced agency supervision and review, and for increased independence in the investment of Federal funds.

A new institution is recognized following a positive review at step two, and then the institution enters a three-phase "maturation" process. These three phases and the characteristics of the funding process are described as follows:

Phase I: Development of a Program Plan

The agency will provide core support for:

. Development of program plans

. Institutional functions, including their development.

The proposals for a new institution will be given a thorough review, both within and outside the agency. Again, the final selection will be made from recommendations submitted to the agency's director. The award is in the form of a one-year contract, negotiated from the scope of work outlined in the proposal. The scope of work will delineate the steps which must be taken to organize the institution (e.g., to incorporate, select a board, establish an affiliation with the sponsoring agency, seek faculty appointments, etc.). Secondly, the scope of work will guide the new institution in defining its mission and developing a comprehensive program plan according to the guidelines furnished by the agency. Implementation of the new plan will occur during Phase I as time and funds permit. Finally, the scope of work will also permit site selection, staffing, etc.

No more than one renewal contract will be issued for Phase I, providing a maximum total funding of two years. Funding will be of a core support type, negotiated annually from the scope of work statement.

Graduation to Phase II will be contingent on the completion of at least one program plan that has been judged by an outside review panel to merit further support. Criteria for the support of the program plan will be the same as those for mature, Phase III institutions. However, assessment procedures will make certain allowances for the newness of the institution and the experience

that is to be gained in the next phase. Termination of support after the two-year Phase I period will result from failure to come up with an acceptable plan.

Phase II: Management of R&D According to Program Plan

The agency will provide core support for:

. Program plan refinement efforts

. Core institutional functions

. Specific substantive program activities

Funding in this phase will be also based on core support and an annual contract that is negotiated from the scope of work to be performed. The agency will work closely with the new institution during this phase to help bring past institutional R&D experience to bear on its needs and assure that management capabilities are developed that will permit it to progress to Phase III. There will be four main objectives during this period. First, staffing will be completed so that the management of the new program will not be hampered by inadequate staff. Second, the R&D program as outlined in the program plan will be brought into full operation. The success in ability to manage R&D efforts as outlined in the plan will largely determine whether the institution will ultimately survive and graduate into Phase III. Third, the program plan will be refined so that it is more operational in light of the experience that has been gained, and so that it conforms in detail to the requirements imposed on program plans as specified for Phase III

institutions. Fourth, the business office of the institution will shift its budget lines so that all expenses are related to program objectives.

Except in rare cases, Phase II will last no more than two years. A thorough assessment will be conducted at the conclusion of the two-year period. The assessment will have three parts: 1) a review of the relevance of current efforts to the institutional mission, 2) a review of institutional management and accounting capabilities, and 3) a review of program plans. Guidelines and review criteria will be available from the Federal agency. The program plan review will be conducted in the same way as for a new program plan submitted by a mature, Phase III institution. Termination will result from inability of the institution to adequately manage its R&D program plan.

Phase III: Mature Institutions Independently Developing and Implementing Program Plans

The agency will provide program support for:

- Program plan budgets
- Capital facilities development
- Independent research
- Fee structure

On graduation into Phase III, the institution becomes much more independent from the agency and is then regarded as an important educational R&D resource whose work contributes significantly to national needs.

When additional capital facilities development money becomes available, grants will be limited to institutions which are in the Phase III category.

The agency's commitment in this phase is to the entire period of research and development activity as described in the approved program plan. Though such multi-year commitments can only be moral ones, the institution is assured that the question is no longer whether to fund the program but how. Surveillance of the progress will largely be the responsibility of the institution and the reviewers that it designates. The Federal agency will participate but only in a minor role and as required to protect its capital investments. Only when there is cause to suspect that the program is in need of outside intervention will the agency again take the initiative for assessment. This could occur if the program is known to be in trouble, if the management of the institution has suddenly changed, or if it becomes obvious that productivity could be greatly increased by expanding the program plans.

Phase III has no definite time period associated with it. The level and duration of Federal support is directly related to the number, size and duration of the programs to which commitments have been made.

To maintain Phase III status, the institution must maintain its reputation for doing quality educational R&D work. This will be reinforced for the agency at the conclusion of each program, when

the outcome assessment is done. (Outcome assessment will be discussed in the next section along with the other types of assessment for mature, Phase III institutions.)

Not all agency-supported institutions will have gone through the maturation model (Phases I, II and III) presented here nor is there a logical reason why all should. Some will have gained prerequisite experience through other funding sources and may be ready to apply for Phase III status immediately. To do so they must go through the same assessment procedures as though they were just concluding Phase II. Institutions will not be allowed to regress voluntarily to an earlier phase--the core support will only be available to new institutions (Phase I and Phase II) or when it is in the best interest of the Federal Government to rehabilitate a needed institution.

The agency will be organized in such a way to facilitate the operation of this support policy: monitoring, negotiating contracts and managing reviews as necessary.[4/]

Except as noted above core support will not be available to mature institutions--the funding will be budgeted to ongoing, approved programs. Institutional overhead, fringe benefit packages and other indirect costs will be prorated across the programs.

Two additional line items will appear only in the budgets of the mature, phase III institutions: one for independent research and the other a management fee.

Independent Research

The purpose of the independent research money is to support, on a cost-reimbursable basis, those programmatic research activities that may be only marginally related to the main budgeted programmatic effort. It might be used by the institution to start new initiatives in related areas by conducting feasibility studies, needs assessments, etc.; it might be used to supplement another programmatic thrust to enlarge the yield of that effort; or it might be needed for maintenance of activities related to outcomes of previous programmatic commitments.

The activities to be supported by the independent research portion of the budget must be consistent with the mission of the institution (i.e., the objectives that guide the institution in the selection of their endeavors). While it is not necessary that it be spent for the program in whose budget it appears, independent research money will be spent on activities which complement that program inasmuch as both will relate to a common institutional mission.

The independent research money will not be used 1) to build a reserve fund, 2) to engage in activities designed to reorient the institutional capabilities in ways not intended by the sponsoring agency, 3) for the purchase of laboratory equipment and other capital assets (without prior agency approval), or 4) for costs that are not otherwise normally reimbursable.

Essentially, the added advantage intended for the independent research portion of the budget is the freedom to support the needs of a variety of activities within the institution in order to permit a degree of flexibility and local initiative necessary to maintaining a high quality institution. It is not intended to be a means of acquiring capital or building a reserve.

The independent research costs are not expected to exceed 8% of direct program costs.

Management Fee

The purpose of the management fee is to enable the accumulation of a reserve to provide operational stability during temporary fluctuations in contract support and while contracts are being renewed, to enable the payment of necessary and reasonable business expenses not covered under the direct and indirect provisions of the contract and to enable participation in endeavors that require limited operating capital such as Federal cost-sharing activities. The fee, as determined by negotiation, will belong to the contractor subject to appropriate disclosure of use. It will be made in the form of a grant to the contractor at the beginning of the contract period.

The management fee is to be based on the needs of the contractor and includes limited amounts to cover those necessary and prudent costs of doing business that are not otherwise reimbursable.

Fees can properly be used for such things as:

. temporary payment of operating costs during periods between contracts.

. recruitment and relocation costs for high caliber talent.

. community and charitable obligations.

. building program capabilities which are relevant to the work being contracted.

. modest and reasonable business entertainment expenses.

. interest on loans.

. reasonably incurred penalties and fines.

. to build a limited reserve fund to be used for operational stability.

. legal fees.

It will be improper to use fees for such things as:

. accumulation of a large reserve working capital.

. the purchase of buildings, property or other large capital assets.

. incentives that will accrue to the benefit of individual employees to the exclusion of others.

. any extravangance in travel or entertainment expenditures.

. endeavors which are intended to enhance the capability of the institution in an area that bears no relationship to the contract or the desires of the funding agency.

. endeavors intended to reorient the motives of the institution to place them in competition with private business.

. support of an independent research program (covered elsewhere on a cost-reimbursable basis).

Once the fees have been determined, they belong to the contractor to be administered from the office of the director. However, to ensure that appropriate use is made of the fee, each year a disclosure of the uses made of the fees will be required and used as a factor for consideration of the amount of fees to be negotiated in subsequent years.

Specific guidelines for the awarding of the fee, to be worked out in advance of negotiation will describe how to justify need. Generally, however, the fee normally will not exceed 3% of direct costs, contributing to a reserve fund that, collectively (including fees from all sources) should not exceed 3-4 months normal operating expenses for the institution.

There are two important considerations in the negotiation of fees that would appear to warrant an exception to the 3% ceiling: 1) the competitive nature of the proposed work, and 2) the administrative procedures within the institution for handling the fee.

This policy statement has largely assumed that program funding commitments are made by the agency on a non-competitive basis. Since the laboratories and centers, by virtue of their non-profit status and their special relationship to the sponsoring agency,

are generally considered to be a valuable and available Federal resource, they are often asked to do work on a non-competitive basis. However, not all proposed work will be non-competitive. When they do enter a competitive proposal as in response to an open solicitation by the agency, the fee negotiation guidelines that accompany such awards should be revised upward to a 5% ceiling in recognition of the added costs and risks of proposal writing, loss of the usual non-competitive benefits (e.g., the Program Planning Grant), and to bring them into conformity with other bidders. The 5% ceiling is still well under the fees collected by the private sector in recognition of the special tax-exempt status of the non-profit. Subsequent year continuations of that work should be negotiated according to the lower (3%) fee guidelines since the risk elements will then be substantially reduced.

The second exception is occasioned by the special relationship that exists between some of the centers and their parent institution, the university. In some cases the university is providing some cost-sharing with the funding agency and in all such cases there is added complexity concerning the indirect costs. Some costs which the center would normally consider to be indirect (e.g., the director's salary) are considered by the university to be a direct. Therefore there are individual arrangements regarding the portion of the indirect costs to be retained by the

university for overhead and the portion to be passed on to the center for management. It is assumed that the entire fee amount will be made available to the director of the center to be managed according to the principles under which the fee is awarded. If administrative procedures do not permit the fee to be passed to the center, it should not be awarded.

Similarly, the independent research money is to be used within the center in the same manner as other direct costed items, with the usual portion to be retained by the parent institution for overhead which is only to be taken from the indirect cost pool. Where the center is sharing costs through the resources of the university, some tradeoffs should be permitted in the contract negotiation in recognition of that fact. However, cost-sharing should not be required of one contractor unless it is required of all. This is important to the implementation of a uniform policy.

A further discussion of these exceptional issues regarding the fee is attached (Attachment C).

As a general guideline, fee money should not be used for the purchase of pieces of equipment where the institutional investment in the total configuration into which that piece fits exceeds $10,000. This includes such items as computer systems, printing apparatus, etc. The intent is that when approval is

given for purchase of such major items, it will be financed by the basic contract.

Fees should not normally be used to forward finance the costs of operating the institution. Such financing will normally be provided through advance payments or letter-of-credit arrangements.

The expenditure of fees without disclosure will jeopardize future fee awards regardless of the reserve level. Income derived from the investment of fee reserves will be taken into account in future awards. Any fee reserves derived directly or indirectly from awards made by the funding agency may be reclaimed by the Federal Government at the time of the dissolution of the non-profit corporation or if the mission of said corporation changes to such an extent that it is no longer conducting educational research and development work.

V. SUPPORT OF PROGRAMS WITHIN MATURE INSTITUTIONS

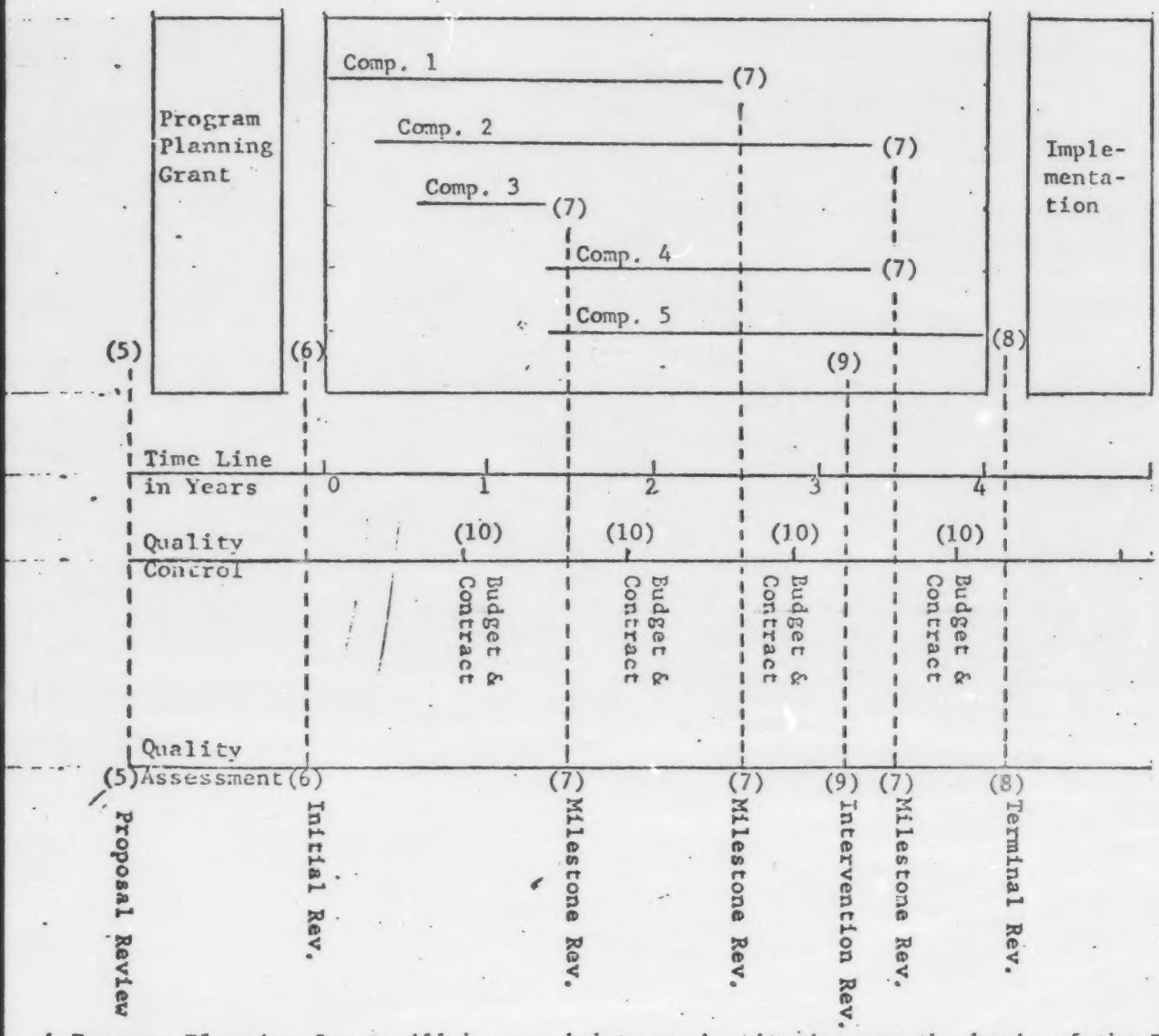
This section describes in greater detail the monitoring and review sequence for agency-supported programs in mature (Phase III R&D) institutions. The diagram in Figure 2 portrays the sequencing of a typical program. It illustrates three stages, six types of review, and two areas of agency responsibility.

Program Stages

Program Plans will generally be written with the aid of a Program Planning Grant. A Program Planning Grant may be awarded to a mature, Phase III institution for the purpose of developing plans

FIGURE 2

EVENTS IN AN AGENCY-SUPPORTED R&D PROGRAM FOR PHASE III INSTITUTIONS
Program A



A Program Planning Grant will be awarded to an institution, on the basis of the Proposal Review (5) in order to develop a basic plan for a needed educational R&D program. An extensive Initial Review (6) will determine whether the agency will make a moral commitment to support the program through to its completion. If the program is selected by the agency, then Milestone Reviews (7) will be conducted at the completion of significant components of the program. An Outcome Review (8) at the end of the program will obtain accountability data and will be the basis for Implementation decisions. By exception, a major Intervention Review (9) will be conducted when important changes in support or direction of the program is indicated. Annual budget adjustments (10) will be made according to available funds and program needs. These six reviews, together with the first four (in figure 1) make up the 10-step assessment system.

for needed agency programs. The institution will submit a brief proposal which outlines the intentions of the institution. Awards generally covering a period of about three months, will be contingent on current national needs, Federal priorities, and the availability of funds. The award of the grant does not imply agency commitment to the proposed program--that determination is made later.

The Program Plan will describe a comprehensive, multi-year R&D effort, including major components, expected products, delivery schedules, projected funding requirements, management plans, assessment plans, reporting plans, and implementation strategy. Major milestones will be delineated in such a way that milestone outcomes can be reviewed readily. Complete instructions for the content of the program plan is available in a separate document (see Attachment A). As noted in that document, long-range plans may have to be broken into discrete segments of three to five years each in order that reasonable projections can be made by the institution and thereby a reasonable commitment can be made by the agency. Where such phasing of a long-range plan does occur, agency commitment covers only the current segment.

It is sometimes necessary to make substantial modifications to an ongoing program plan because of unforeseen events that have taken place. When this occurs, the modified plan will be submitted to the agency to confirm continued commitment--such commitment should not be assumed. In general, the agency will continue to fund a program to which it has given moral commitment throughout the

completion of the program, subject to the availability of funds and the satisfactory execution of the program.

While the program plan will include a discussion of implementation plans, the latter (if they are extensive) will often have to be written up as a separate plan since other sources of agency support might reasonably be expected.

Program plans which have been developed under a Program Planning Grant may be submitted to other agencies for possible funding. However, the institution must use discretion to avoid possible charges of having unfair advantage over competitors in that Federal money would be used in the planning effort.

Budgetary Provisions

Two different kinds of budget submissions will be required: the projected, multi-year budget for the entire program, and the more detailed annual budget submission for the coming year's work. The first is a part of the Basic Program Plan submission, the latter will appear in the Annual Budget Justification.

The Basic Program Plan budget will contain macro cost figures by year and major components for the projected commitment period. These cost estimates will include all direct and indirect costs. Independent research and fee estimates will be projected on the basis of 8% and 2% of direct costs, respectively. A sample budget table shown in figure 3 gives subtotals by major activity

and by year. Additional tables might be used to show such things as manpower projections, overhead expenses, etc.

FIGURE 3

SAMPLE BUDGET FOR A BASIC PROGRAM PLAN
(Thousands of Dollars)

Components	1973	1974	1975	1976	Component Subtotals
"A"	135	170	65		370
"B"	10	210	200	200	620
"C"		95	315	400	810
"D"	120	120	125	140	505
Annual Subtotals	265	595	705	740	
				Grand Total	2305

A much more detailed budget will be submitted in the Annual Budget Justification. This will present a costing of the operating expenses for the coming year's R&D activity. An example of such a budget is included here (figure 4). It is understood, however, that the independent research and management fee line items would appear in the budgets only for mature, Phase III institutions--institutions located at earlier stages in the maturity model would not be eligible for these funds.

FIGURE 4

SAMPLE BUDGET TABLE FOR THE ANNUAL BUDGET JUSTIFICATION

SOMEWHERE REGIONAL LABORATORY
FY 1973 BUDGET FOR PROGRAM "A"

1.	PERSONNEL COMPENSATION		TOTAL $_____
	a. Salaries and Wages	$_____	
	b. Consultants	_____	
	c. Other	_____	
2.	PERSONNEL BENEFITS		TOTAL $_____
3.	TRAVEL AND TRANSPORTATION OF PERSONS		TOTAL $_____
	a. Staff	$_____	
	b. Consultants	_____	
	c. Other	_____	
4.	TRANSPORTATION OF THINGS		TOTAL $_____
5.	RENT, COMMUNICATIONS & UTILITIES		TOTAL $_____
	a. Facility Rental	$_____	
	b. Equipment Rental	_____	
	c. Telephone & Telegraph	_____	
	d. Utilities	_____	
6.	PRINTING & REPRODUCTION		TOTAL $_____
	a. Printing	$_____	
	b. Duplication	_____	
	.		
	.		
	.		
10.	INDEPENDENT RESEARCH		TOTAL $_____
	a. Activity #1	$_____	
	b. Activity #2	_____	
	Etc.		
SUBTOTAL DIRECT COSTS			$_____
11.	INDIRECT		TOTAL $_____
12.	MANAGEMENT FEE		TOTAL $_____
TOTAL DIRECT, INDIRECT & FEE			$_____

Note: Independent Research and Fee lines appear only in the budgets from Phase III (mature) institutions.

The sample budget illustrated in figure 4 would be supplemented in the Annual Budget Justification by other tabular information such as that which shows crosswalks by major activities as well as by other categories. The FY 1972 guidelines for the Annual Budget Justification are attached (Attachment B).

Implementation

Implementation is meant to include all of those activities that are required to get an R&D outcome into its intended use. This can include such activities as field testing, market surveys, dissemination of information, negotiation with publishers, on-site demonstrations, and a myriad of others. At issue here is the question of what part of the implementation strategy belongs to the R&D process, and hence should be included for funding in the research and development stages of the effort. If the sources of funding are common for both the developmental and implementation portions, the question is academic; one plan would suffice for the entire effort. However, there is some likelihood that responsibility for the two kinds of activity will be partially if not completely divided among different Federal agencies and/or legislative authorities. If so, where does the responsibility of one leave off and that of the other ensue?

The answer given here is a matter of principle rather than a set of guidelines. The notion that all implementation costs should be

kept separate from all R&D costs, and funded separately, is rejected on several grounds:

1. Limited implementation activity should normally begin at the very outset of the program (e.g., needs assessment, market survey, contact with publishers, etc.). This is usually too early in the process for those whose primary interest is in implementation to begin funding that activity.
2. There is clearly an R&D component to implementation, including the validation of the outcome through field tests and demonstrations, building an implementation strategy, etc.
3. Many activities cannot be neatly categorized into R&D or implementation (e.g., needs assessment, joint efforts with publishers, etc.).
4. It is rare to find a point of time in a program where R&D stops and implementation begins--one can, at best, find a difference in the weighting of emphasis.

Therefore the principle is to choose an arbitrary point, based on projected delivery schedules, where the emphasis will clearly shift.

Figure 5 graphically illustrates the above principle. While it is not proposed that the pictured relationships are valid for all programs, or any one in particular, there is an acknowledged progression. Developmental costs typically exceed research costs by an order of magnitude and implementation costs are often another order or two higher. The graph also shows a great deal of overlap

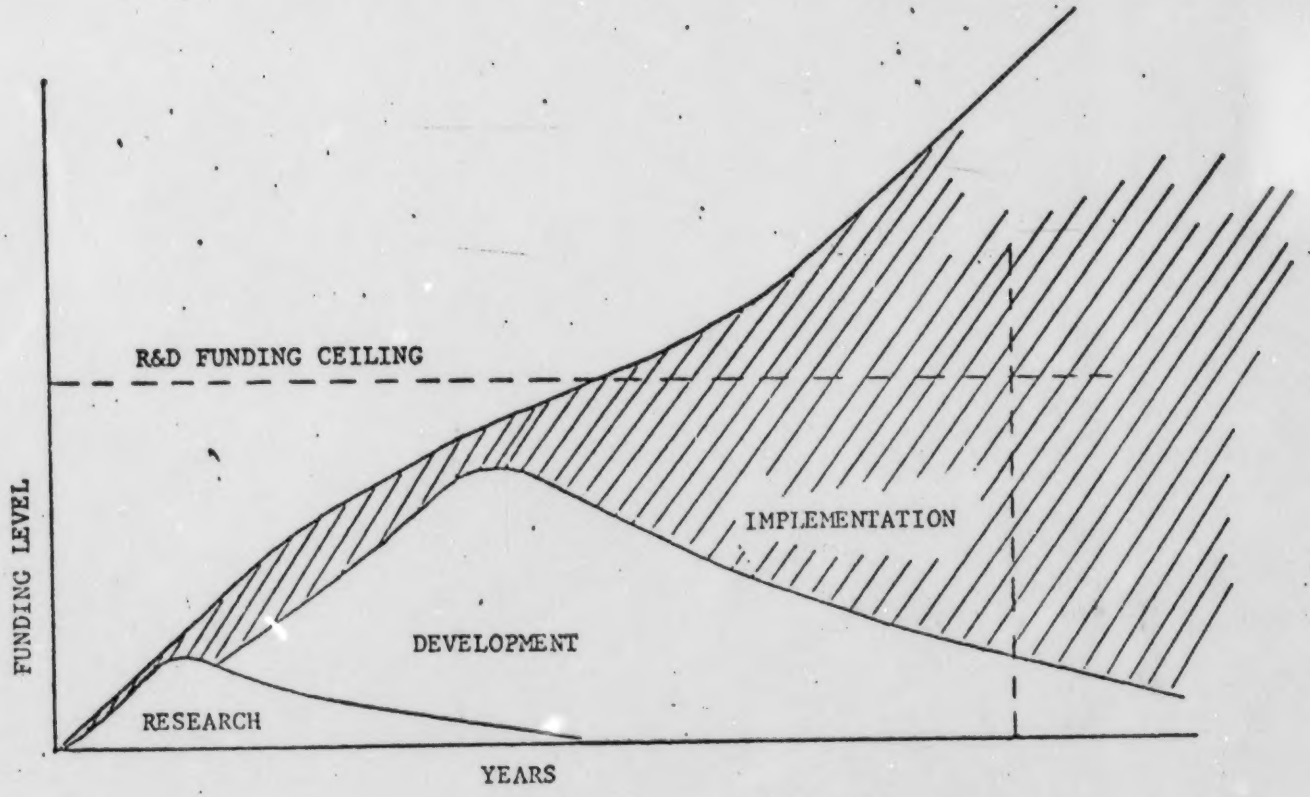


FIGURE 5

COSTS OF IMPLEMENTATION TO BE BORNE BY THE RESEARCH AND DEVELOPMENT PROGRAM (WITHIN THE RECTANGLE) VERSUS COSTS TO BE BORNE BY AN IMPLEMENTATION PROGRAM

between activities. The axes are not calibrated since these are highly subject to individual differences. The twofold principle is illustrated by the broken lines, namely: 1) that there exists a practical ceiling above which R&D money should not be used to support implementation costs, i.e., the horizontal broken line, and 2) that there also exists some "bail-out" point beyond which the program should no longer be considered an R&D effort, i.e., the vertical broken line. The residual R&D effort that continues into the implementation period can be continued through the use of independent research money from other funded activities.

The effect of this twofold principle is to recognize that R&D resources cannot and should not have to bear the high implementation costs; it provides a rationale for a gradual phase-in of implementation funding to start near the end of the main development effort as well as the shift of primary funding to non-R&D sources. There is clear recognition that these "target end dates" for the R&D work must be set quite arbitrarly but with adequate reasoning. It also avoids the problem of the classification of activities (usually artificial at best) into categories of R&D versus implementation.

The Institutional Role

While the policies which have been discussed in this paper thus far have stressed the funding of programs within institutions,

little has been said about the role of the institution itself. This policy does not subscribe to the notion that the institution is nothing more than a collection of its various activities--as the program funding might seem to imply. On the other hand, this will not be an attempt to define what constitutes an institution. Rather, certain institutional features are highlighted to set apart the intent of this policy from the funding of scattered R&D proposals.

First, to qualify for program funds under this policy, the institution must be approved in the sense that it has been placed, by formal review, into one of the categories of the maturity model, i.e., Phase I, II, or III. This could be a new institution, just starting the sequence, or an existing one that is looking for an approved status.

Second, the institution will possess a valuable expertise, developed from the mission which brought that particular cluster of talent together into a corporate body. Institutions assigned to Phase I or Phase II will be assessed partially on their ability to develop such a mission and to focus their activity in relation to it. Phase III institutions will be expected to discipline themselves regarding choices of activities which are consistent with their mission. They will not be prevented from modifying their mission but they certainly ought not to abandon it. Institutional mission will be an important consideration in reviewing

a new Basic Program Plan as an indicator of appropriateness for that institution to do the work.

Third, the institution will have a management team that directs the ongoing activity and a sponsor to which it is accountable. This will often be the director, his deputies and the board of trustees, or the parent institution in the case of university-based centers. All requests for funding must be transmitted through the management with the backing of the institution, and all awards must be negotiated with the director (or those whom he delegates). This policy specifically disclaims the use of communication channels between the agency and the institution for matters of business (e.g., proposing, funding, performance standards, etc.) other than those approved by the institution. Sub-units may not submit proposals without institutional approval.

Finally, although the agency will be reviewing management practices of an institution only during its first few years of operation (Phases I and II), that should not be interpreted as a lack of interest in the management of Phase III institutions. Rather, it is assumed that the management sophistication of these institutions will have outgrown the assistance that the agency has to offer. But, in any case, inferior management in these institutions will eventually become evident in poor plans and performance which would be likely to result in intervention reviews and/or unsuccessful proposals.

Areas of Agency Participation

There are two major areas of responsibility for the Federal funding agency in the support of R&D programs.[5/] First, there is the kind of evaluative role that leads to funding decisions, or the quality assessment role. Those responsible for quality assessment must organize and manage the various reviews that have been discussed (with the exception of the milestone review). They must translate these reviews into recommendations for use in making the funding decision, and be able to back up the decision with facts once it has been made. Their contact with a particular institution will not be frequent but will have major importance with regard to funding. They will be answering the question, whether, i.e., whether to fund, whether to graduate the institution, whether to make the grant, etc.

Secondly, there is a facilitative and management consultant responsibility, or the quality control role. Those responsible for quality control will be assisting the institutions on a continual basis with their current responsibilities, whether helping to strengthen the management of the institution or deciding how

to apportion a given amount of money among supported programs. They will evaluate the Annual Budget Justification in relation to the Basic Program Plan to assure that the R&D effort is still on track. They will negotiate the annual contract, not deciding whether, but how and when. Together with the institutions they will make the management decisions that will provide the best stretch for the available dollars and maintain the integrity of the ongoing programs. Their role is described by the adjectives, nurturant, facilitative, advocacy, consulting, etc.

VI. THE ASSESSMENT SYSTEM

The assessment system for the institutional maturity model and funding-by-program policy is structured around a 10-step review process. The assessment to be performed in each of the 10 reviews must provide a definitive answer to one key question in each case. Each type of review is keyed to a particular critical point in the funding process. The consequences of some of the reviews will be more far-reaching than others and, in that sense, might be considered more important. This is particularly true with the decision to make the award for starting a new institution (review #2) and the decision to provide multi-year funding for a newly proposed program (Initial review, #6).

One of the reviews, the Milestone review (#7), is designed to be administered entirely by the institution with the Federal Government maintaining only nominal representation.

The 10 steps of the assessment system are described below. The numbering of the reviews corresponds to figure 1 (reviews 1-4) and figure 2 (reviews 5-10). Consulting these two figures should help to illustrate the context in which the reviews will occur.

1. Award of grants for planning new institutions. An Institutional Planning Grant proposal will be solicited from groups and agencies interested in founding new educational institutions. The proposal will be reviewed prior to a funding decision.

   The key question to be answered in this review is: Should the request for a planning grant for a new institution be funded?

2. Award of operational grant for starting new institutions. The award of a planning grant will lead to the development of a full-scale institutional proposal. The latter will be reviewed between three and six months after the termination of the planning period. If accepted, the proposal will provide funds to establish a new institution.

   The key question is: Should a given proposal to start a new institution be funded?

3. Approval of a new institution program plan. After a development period of one to two years, the new institution will be required to submit a report summarizing its organization and defining its mission. At least one program plan must be developed.

The key question is: Is the basic program plan of a given institution satisfactory?

4. Certificating a new institution's management capabilities. During this phase the new institution will be required to bring the program plans into full operation. After approximately two years a report will be required to determine if the institution is mature enough to continue with program support.

   The key question is: Is the institution capable of managing its basic program plan?

5. Award of Grants for planning new programs. An institution that has successfully completed its maturity review will be classed as a "mature institution" and will be eligible to apply for one or more planning grants for new programs. (Already mature institutions may submit Program Planning Grant proposals without going through decision points 1-4.) The proposals for such Program Planning Grants will be reviewed.

   The key question is: Should a given proposal for a Program Planning Grant be funded?

6. Approval of Basic Program Plans. The award of a new Program Planning Grant will result in a planning document that will be reviewed.

The key question is: Should the agency commit itself to support the proposed Basic Program Plan to its projected completion date?

7. Milestone Review. A funded program will have specified milestones at which certain phases of the program work must be completed. As these milestones are reached, a report will be submitted for review. This assessment, unlike those at earlier or later stages, will be made by a review team appointed by the institution. The information collected by the team will be shared with the agency.

   The key question is: Are significant milestones in the program plans being reached, on time, and with satisfactory quality?

8. Program Outcome Assessment. When a program concludes, its final outcome will be reviewed.

   The key question is: Did the program reach its objective?

9. Modification of Support Commitment for Mature Institution Motivated by Special Circumstances. Special circumstances, e.g., the departure of key leadership personnel, that appear capable of altering the institution's capibility to continue its programs, may prompt the agency to investigate (i.e., Intervention review). Alternatively, the management of the institution may elect such a review in order to revise the commitment in terms of updated program planning.

The key question is: Do current circumstances of the programs or institution require redirection or changes in agency support?

10. Budget and Contract Review. This review differs from the previous nine because it occurs annually as a function of congressional appropriations. Its purpose is to determine whether or not adjustments should or must be made in the institution's funding pattern.

The key question is: With given funds each year, how should any given program be adjusted, stretched, or compressed?

Decision points 1 and 5 relate to planning activities; decision points 2 and 4 to institutional factors (initiate, adjust); decision points, 3, 6, 7, 8, and 9 to program factors (initiate, adjust, terminate); and decision point 10 to annual budgeting factors.

Decisions will be based on recommendations made by review panels made up of expert judges. The judges will be talented professionals who have earned a national reputation in their respective areas of expertise.

The assessment system will operate within a two-tiered framework of review panels, a Master Panel and several Specialist Panels.

The Master Panelists will be drawn from a variety of professional areas, will be professionals of the highest caliber, whose reputation and experience will lend credibility to their recommendations

at all levels of the Federal Government. They will assist the agency's director in examining areas of national need, will recommend funding patterns that respond to those needs, and will aggregate specific funding recommendations obtained from the Specialist Panels and transmit them to the agency. They will, with the approval of the agency's director, manage the major activities of the Specialist Panels, defining their areas of concern. In general, the Master Panelists will not participate, firsthand, in the reviews. Instead, the Specialist Panels will be providing that data for them.

The Specialist Panels will be composed of peer professional group members who are thoroughly competent in the methodology and technology they are asked to review. They will review planning documents, visit institutions, and do whatever else is required to make sound judgments. Their recommendations will be submitted to the Master Panel who will aggregate them and transmit them to the agency.

An Evaluation Auditor will provide a means for appealing review outcomes when irregularities are perceived. He will be directed by the Master Panel in verifying the authenticity of any questionable review outcomes.

The entire assessment system is described in detail in an attached document (Attachment D).

VII. RELATIONSHIP OF THE PROPOSED POLICY TO NIE PLANNING

At the time of this writing, NIE legislation is pending before Congress. In anticipation of the passage of that legislation, the USOE has established an NIE Planning Unit. In addition, the RAND Corporation was commissioned to undertake a planning study for the proposed NIE, to be carried out under the direction of Dr. Roger Levien. The report produced by that study is commonly known as the Levien Report. The examination of these two sources provides the best available evidence of the relationship between this policy statement and goals for NIE.

It is commonly understood that the regional laboratories and R&D centers will become a major resource for NIE when the latter becomes operational. Under the expectation that this will occur relatively soon, possibly as early as July 1972, it becomes imperative that whatever changes are made in the method of supporting R&D in these institutions be compatible with the planning for NIE. A short-term change of the magnitude proposed here would not be worthwhile.

The proposed policy is completely compatible with the planning for NIE as indicated from two primary sources: 1) the Levien Report, and 2) the documents which have been produced by the current NIE planners. [6/]

The Levien Report

Pertaining to the regional laboratories and the R&D centers, the Levien Report states:

> These kinds of institutions...will be essential constituents in the R&D enterprise supported by the NIE and especially important links between it and the educational system.
>
> .....
>
> The NIE will take over the principal funding of the laboratories and centers. When it does so, it should aim to create a more mutually satisfactory relationship between the sponsoring agencies and the university-based and independent research institutions.

After stating the objectives of the proposed relationship, the report lists the following three means of achieving those objectives: 1) "Creation of additional laboratories, centers and other independent agencies as the needs for new ones are demonstrated," 2) "Institutional support should be a major portion of an institution's budget only in the first few years...After that period, the majority of an institution's budget should be program support, obtained in some form of competition with comparable institutions," and 3) "Multiple sources of support for the laboratories and other applied research and developmental organizations should be encouraged."

The proposed policy fully meets each of these criteria. A mechanism for creating new institutions has been presented in some detail. The existence of the mechanism does not guarantee the creation of new institutions, nor indeed should it. New institutions should

come about in response to needs, not because of a mechanism. The mechanism does enable and facilitate the process.

The Maturity Model in the proposed policy is completely consistent with the second listed "means" to be employed by NIE. It goes further in that it describes an orderly progression of a new institution from an institutional form of support to program support and defines the intervening steps and criteria for advancement.

The proposed policy also encourages the concept of "multiple sources of support" by defining the Program Plan to be a unit of work for which support from any agency may be sought.

The NIE Planning Unit

The current plans for NIE are known to be in complete harmony with this policy. Several members of the NIE Planning Unit have had direct input to its formulation. NIE planning documents, in describing funding policy, contain text which has been taken from these support policy documents. While it is recognized that the activities of the Planning Unit are essentially advisory at this point, there is good reason to expect that most of their recommendations will be implemented.

VIII. CONCLUSION

The system proposed in this paper is not free from bugs--the institutions for which this is designed are too large and

complex to be fully explained in a few pages. This system does, however, provide a means for responding to all of the objectives listed at the outset. It can lead to a curbing of the policy of attrition which has characterized the effort during the past few years. In addition, by insisting on comprehensive program plans, multi-year commitment and the associated stability can become a reality and the Federal agency will have firm dollar amounts to use for justification when requesting an expansion in appropriations for institutions.

FOOTNOTES

1. Marion G. Epstein, et al., Selection of Products for Focused Dissemination, a final report prepared for USOE, Educational Testing Service, Princeton, New Jersey, May 1971.

2. John Hemphill, "Management and Operation of Educational Laboratories," Journal of Research and Development in Education, Vol. 3, No. 2, Winter 1970.

3. Ward Mason, DMI Institutional Support Policy, a working paper (mimeo).

4. & 5. The organization that will implement the various aspects discussed in the paper include the following:

   . The Program Management Branch will have primary responsibility for the quality control role.

   . The Assessment Support Branch will have primary responsibility for the quality assessment role.

6. Roger E. Levien, National Institute of Education: Preliminary Plan for the Proposed Institute, HEW Report No. R-657, RAND Corporation, February 1971.

QUESTIONS AND ANSWERS

The following are some selected questions that have been asked over a period of several months interaction with persons within and outside the Federal establishment, and particularly with those in the laboratories and centers who will be most directly affected.

Q. How does one reconcile the definition given of a program (commitment to objectives) and the requirement for providing projected budget and completion date data?

A. The program that receives a moral commitment for funding by the agency may be, in fact if often will be, only a subset of the long-term objectives that are envisioned by the institution. Because of the practical problems which limit the projection of sound plans, it will often be necessary to obtain commitments to logically divided segments. Therefore the time and budget limitations may pertain to specified time increments within the endeavor with an added mechanism provided to change these limitations if that becomes necessary.

Q. How can a Basic Program Plan be modified after it has received agency commitment?

A. The institution may prepare a modified version which incorporates the revisions entailed by circumstances since the previous commitment was made and request that the agency perform an intervention review.

Q. Can a commitment be terminated as a result of an intervention review when that review was made at the request of the institution for the purpose of examining a modified plan?

A. No. Only the question of the revised plan will be addressed. However, if there is obvious reason to doubt the quality of the program, the results of that review could stimulate the agency to make its own investigation.

Q. Is the lack of expected Congressional appropriations adequate grounds for terminating a commitment?

A. No. Program commitments will be terminated only for reasons due to unsatisfactory quality or progress, or for significant deviations from the objectives or budget of the program plan to which commitment was made. Programs under commitment will have equal priority and, in the case of necessary short funding, budget reductions will be distributed among all programs in an equitable manner.

Q. Who decides what part of implementation costs are to be paid from R&D funds and what part from other funds?

A. The legislation may help to decide that question. There may not be such a distinction. If there is, it may not be entirely clear. It will primarily be the responsibility of the heads of the agencies (units, divisions, etc.) in charge of the respective funds to work out the necessary linkages.

Q. Can a mature institution elect to regress to an earlier stage in the Maturity Model?

A. No. Regression is normally not permitted although the agency will retain the prerogative of moving an institution back if its purposes are better served thereby. If this is done, it will be in lieu of a more severe action.

Q. Why is independent research not lumped in with a larger fee amount?

A. Recent studies performed by the General Accounting Office have indicated that contractors who had authority to use fee money for independent research were, with few exceptions, not doing so. It was GAO's recommendation that independent research be a direct cost item.